

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/009680 A2**

(51) International Patent Classification<sup>7</sup>:

**B24B**

(74) Agents: MESSINA, Michael, A. et al.; McDermott Will & Emery LLP, 600 13th Street, N.W., Washington, DC 20005-3096 (US).

(21) International Application Number:

PCT/US2004/023116

(22) International Filing Date: 20 July 2004 (20.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/489,111

23 July 2003 (23.07.2003) US

(71) Applicant (for all designated States except US): ENGIS CORPORATION [US/US]; 105 W. Hintz Road, Wheeling, IL 60090 (US).

(72) Inventors; and

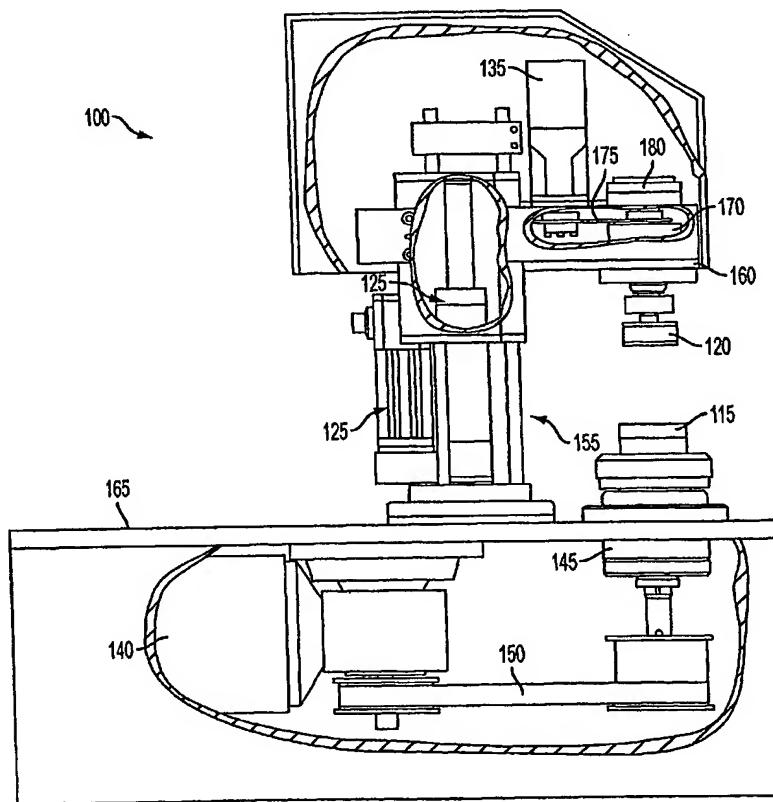
(75) Inventors/Applicants (for US only): BENEÀ, Ion [RO/US]; 575 Denoyer Trail, Wheeling, IL 60090 (US). GRIFFIN, Stephen [US/US]; 61 Grange Road, Elk Grove Village, IL (US). DOYLE, Ralph [US/US]; 639 North Hawk Street, Palatine, IL 60067 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: APPARATUS FOR MEASURING THE CRUSHING STRENGTH OF MICRON SUPERABRASIVES



(57) Abstract: A method and apparatus are provided for measuring the crushing strength of an abrasive, comprising particles, used in a lapping process. Embodiments include a crushing strength tester having a cup for holding the abrasive; a first motor for rotating the cup in a first direction; a piston having a face for rotatably fitting within the cup and contacting the abrasive; a second motor for rotating the piston in a second direction opposite the first direction; and a press for pressing the piston against the abrasive and crushing the particles while the first and second motors are rotating. An initial particle size distribution for the particles is determined, then the abrasive is subjected to a crushing force approximately equal to that of the lapping process using the crushing strength tester. A post-crushing particle size distribution for the particles is determined, and the initial and post-crushing particle size distributions are compared.

WO 2005/009680 A2



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

- without international search report and to be republished upon receipt of that report